

F.A. PROJECT NO.

NOTES

ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.

DESIGN FILL-----

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

76mm Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 100mm OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

THIS BARREL STANDARD TO BE USED ONLY ON CULVERTS ON 105° SKEW AND TO BE USED WITH STANDARD WING SHEET WITH THE SAME SKEW AND VERTICAL CLEARANCE.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 21.0m. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

STEEL IN THE BOTTOM SLAB MAY BE SPICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION, HE MAY SPICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE

BARREL @ _____ m³ / m _____ m³

WINGS ETC. _____ m³

TOTAL _____ m³

REINFORCING STEEL

BARREL _____ kg

WINGS ETC. _____ kg

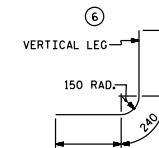
TOTAL _____ kg

CULVERT EXCAVATION ----- LUMP SUM

FOUNDATION COND. MAT'L ---- METRIC TONS



LOCATION SKETCH



BAR TYPE

DIMENSIONS ARE OUT TO OUT

PROJECT NO. _____

_____ COUNTY

STATION: _____

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BARREL STANDARD
QUADRUPLE _____ m X _____ m
CONCRETE BOX CULVERT
105° SKEW

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

TOTAL SHEETS

STD. No. CB4105sm

ASSEMBLED BY :	DATE :
CHECKED BY :	DATE :
DRAWN BY : EEM 6/97	
CHECKED BY : ARB 7/97	

PROFILE ALONG C CULVERT

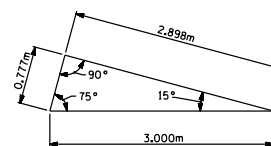
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PART PLAN - ROOF SLAB

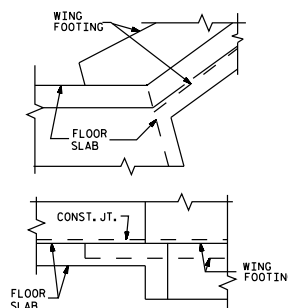
The diagram illustrates the symmetrical layout of a roof slab for a culvert. Key features include:

- Overall Dimensions:** The total length of the culvert is indicated at the top. The width of the slab is 200 units.
- Bar Specifications:**
 - A101 ETC. @ mm CTS. BOTTOM OF ROOF SLAB**
 - A100 BARS @ mm CTS. BOTTOM OF ROOF SLAB**
 - A301 ETC. @ mm CTS. TOP OF ROOF SLAB**
 - A300 BARS @ mm CTS. TOP OF ROOF SLAB**
 - A1 BARS @ mm CTS. CORNER BARS EACH EXT. WALL (SEE BARREL SECTION)**
 - A2 BARS @ mm CTS. CORNER BARS EACH EXT. WALL (SEE BARREL SECTION)**
 - B1 @ mm CTS. STREAM FACE**
 - B2 @ mm CTS. FILL FACE**
 - B3 BARS @ mm CTS. EA. FACE STAGGERED IN INT. WALL**
 - A200 OR A400**
 - A201 OR A401**
 - A200 BARS @ mm CTS. TOP OF FLOOR SLAB**
 - A201 ETC. @ mm CTS. TOP OF FLOOR SLAB**
 - A400 BARS @ mm CTS. BOTTOM OF FLOOR SLAB**
 - A401 ETC. @ mm CTS. BOTTOM OF FLOOR SLAB**
- Structural Details:**
 - 13 G1 BARS @ mm CTS. IN HEADWALL**
 - 3-# S2 BARS @ 130mm CTS. BOTTOM OF ROOF SLAB**
 - 50 CL.** (Center Line)
 - 13 C1 BARS @ 300mm CTS. BOTTOM OF ROOF SLAB EACH BARREL**
 - 13 C1 BARS-TOP OF ROOF SLAB (SEE BARREL SECTION)**
 - 13 C1 BARS (SEE BARREL SECTION)**
 - 3-# S2 BARS @ 130mm CTS. TOP OF FLOOR SLAB**
 - 50 CL.** (Center Line)
- Angles and Orientation:** The diagram shows angles of 75° and 105° at the culvert opening, and a 200-unit width dimension.
- Labels:** "LENGTH OF CULVERT =", "SYMMETRICAL ABOUT CULVERT", "STA.", and "CULVERT" are used to identify key elements.

PART PLAN - FLOOR SLAB



SKEW TRIANGLE



SLAB DETAIL
CONNECTION OF WING FOOTING
AND FLOOR SLAB WHEN SLAB
IS THICKER THAN FOOTING



PROJECT NO. _____
 _____ COUNTY
 STATION: _____

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD
QUADRUPLE m X m
CONCRETE BOX CULVERT
105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STD. No. CB4I05SM